

Claims

01. A pump (10, 10.2, 10.3, 10.4),  
5 - with a rotor (70, 70.4), which is present  
fixedly in terms of rotation on a drive shaft (60,  
60.2, 60.3, 60.4) connectable to a motor drive and  
which possesses a radially projecting rotor collar  
(120, 120.3, 120.4) running around in a wavy  
manner,  
10 - with delimiting faces delimiting the rotor  
collar on both sides in the axial direction and  
leaving between them a pumping duct (124),  
- with an inlet (152) and an outlet for the  
pumping duct (124),  
15 - with an axially adjustable sealing slide (182)  
bearing sealingly against the rotor collar (120,  
120.3, 120.4) on both sides in the axial direction  
and subdividing the pumping duct (124) between the  
inlet (152) and the outlet,  
20 - characterized in that  
- a first bearing point for the drive shaft (60,  
60.2, 60.3, 60.4), for the supporting mounting of  
the drive shaft in the radial direction, is  
25 present within the clear space region occupied in  
the axial direction by the rotor (70, 70.4).  
  
02. The pump as claimed in claim 1,  
- characterized in that  
- this first bearing point has at least one  
30 bearing (80, 200, 202) which is present within the  
clear space region occupied in the axial direction  
by the rotor collar (120, 120.3).  
  
03. The pump as claimed in one of the preceding  
35 claims,  
- characterized in that  
- a sleeve-shaped shaft carrier (50, 50.2, 50.3,

50.4) intrinsically carrying the drive shaft (60, 60.2, 60.3, 60.4) is present from the direction of the pump outer wall adjacent to the motor drive,  
5 - this first bearing point for the drive shaft is present in the projecting end region (76, 76.3) of the shaft carrier.

10 04. The pump as claimed in claim 3,  
- characterized in that  
- the rotor (70, 70.4) is fastened fixedly in terms of rotation in the projecting end (64, 64.3) of the drive shaft (60, 60.2, 60.3, 60.4),  
- the rotor (70, 70.4) is mounted rotatably in the manner of an end cap on the shaft carrier (50, 15 50.2, 50.3, 50.4).

20 05. The pump as claimed in claim 3 or 4,  
- characterized in that  
- the first bearing point for the drive shaft (60, 60.2) of the rotor is present on the inside of the shaft carrier (50, 50.2) and a bearing point for the rotor (70), for the supporting mounting of the rotor in the axial direction, is present on the opposite outside of the shaft carrier (50, 50.2).  
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30 06. The pump as claimed in claim 5,  
- characterized in that  
- the first bearing point, present in the projecting end region (76, 76.3) of the shaft carrier, for the drive shaft and the bearing point for the rotor are present in the same axial cross-sectional plane (112).

35 07. The pump as claimed in claim 4,  
- characterized in that  
- the first bearing point for the drive shaft

(60.3, 60.4) is present on the outside of the shaft carrier (50.3, 50.4),  
- this bearing point is at the same time a bearing point for the rotor, for the supporting mounting of the rotor in the axial direction.

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08. The pump as claimed in one of the preceding claims,  
- characterized in that  
10 - the first bearing point consists of a plurality of bearings (200, 202).

09. The pump as claimed in one of the preceding claims,  
15 - characterized in that  
- a second bearing point for the drive shaft (60, 60.2, 60.3, 60.4) is present in the region of the pump outer wall adjacent to the motor drive,  
- this second bearing point is designed at least 20 for the supporting mounting of the drive shaft in the radial direction.

10. The pump as claimed in one of the preceding claims,  
25 - characterized in that  
- it possesses a pump casing (12) and a bearing block (20) carrying the latter,  
- the pump casing (12) is fastened releasably with its axial rear wall (14, 14.2) to a holding flange (18, 18.2) of the bearing block (20).

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11. The pump as claimed in claim 10,  
- characterized in that  
35 - the drive shaft (60, 60.2) penetrates through the holding flange (18, 18.2) and terminates in the pump casing (12).

12. The pump as claimed in claim 11,  
- characterized in that  
- a bearing point for the drive shaft is present  
in the holding flange.

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13. The pump as claimed in one of claims 10 to 12,  
- characterized in that  
- the pump casing (12) can be fastened, such as,  
in particular, firmly screwed, to the holding  
10 flange (18, 18.2) in various rotary positions.

14. The pump as claimed in one of claims 4 to 13,  
- characterized in that  
- the shaft carrier (50, 50.2) intrinsically  
15 carrying the drive shaft (60, 60.2) for the rotor  
(70) and projecting into the pump casing (12) can  
be fastened to the holding flange (18, 18.2) of  
the bearing block (20).

20 15. The pump as claimed in one of the preceding  
claims,  
- characterized in that  
- the pump casing (12) can be screwed, such as,  
in particular, can be screwed in various rotary  
25 positions, to a flange (52.3) of the shaft carrier  
(50.3).

16. The pump as claimed in one of the preceding  
claims,

30 - characterized in that  
- a bush (220) is present on the inside of the  
rotor hub (74.4) of the rotor (70.4), in such a  
way that  
- the bush (220) sealingly covers each of the  
35 bearings (200, 202) which are freely accessible  
after the removal of the rotor from the drive  
shaft.

17. The pump as claimed in claim 16,
  - characterized in that
  - the bush (220) is mounted fixedly in terms of rotation on the drive shaft (60.4).  
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18. The pump as claimed in claim 16 or 17,
  - characterized in that
  - there is in the rotor hub (74.4) at least one ventilation duct (230, 232), through which air can flow when the rotor (70.4) is pushed onto the bush (220) or when the rotor is drawn off from the bush.  
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- 15 19. The pump as claimed in claim 18,
  - characterized in that
  - at least one ventilation bore (232) in the end wall region (72.4) of the rotor hub (74.4) is present as a ventilation duct.  
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20. The pump as claimed in claim 18,
  - characterized in that
  - a ventilation groove (230) is present, integrally formed in the rotor hub (74.4) on the inside, as a ventilation duct.  
25
21. The pump as claimed in claim 20,
  - characterized in that
  - the ventilation groove (230) is present helically.  
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22. The pump as claimed in one of the preceding claims,
  - characterized in that
  - the holding ring (160.4) is sealed off with respect to the bush (220) in the axial direction.  
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23. The pump as claimed in claim 22,  
- characterized in that  
- there is in the bush (220) at least one sliding  
5 ring (164.4, 166.4) which, pressing in the axial  
direction, can be brought to bear in each case  
against at least one sliding ring (165.4, 167.4)  
present in the holding ring.